

## CLAIMS

1. A method for selecting at least one of audio and video comprising:

- (a) receiving user attribute information corresponding to user preferences;
- (b) receiving program attribute information corresponding to said at least one of audio and video;
- (c) providing a mapping that interrelates at least a portion of said user attribute information and at least a portion of said program attribute information;
- (d) supplementing said mapping with at least one additional interrelationship between at least a portion of said user attribute information and at least a portion of said program attribute information; and
- (e) selecting, in response to receiving said user attribute information and said program attribute information, at least one of audio and video based upon said mapping between said user attribute information and said program attribute information.

2. The method of claim 1 wherein said program attribute information

includes a first attribute and a first sub-attribute, said user attribute information includes a second attribute and a second sub-attribute, said supplementing includes setting a default

comparison between said first attribute and said second attribute, where said default attribute interrelates said first sub-attribute and said second sub-attribute.

3. The method of claim 1 wherein said second sub-attribute is added to said program attribute information after creating said mapping of step (c).

4. The method of claim 1 wherein said first sub-attribute is added to said program attribute information after creating said mapping of step (c).

5. The method of claim 1 wherein said first sub-attribute and said second sub-attribute are referred to by the same name.

6. A method for selecting at least one of audio and video comprising:

- (a) receiving user attribute information corresponding to user preferences, where said user attribute information includes first hierarchical levels;
- (b) receiving program attribute information corresponding to said at least one of audio and video, where said program attribute information includes second hierarchical levels;
- (c) providing a mapping that interrelates at least a portion of said user attribute information and at least a portion of said program

attribute information based upon said first and second  
hierarchical levels; and

- (d) selecting, in response to receiving said user attribute information  
and said program attribute information, at least one of audio and  
video based upon said mapping between said user attribute  
information and said program attribute information.

7. The method of claim 6 wherein said user attribute information includes an  
individual preference element including a name identifier and a value, and said program  
attribute information includes a program description element including a name identifier  
and a value.

8. The method of claim 7 wherein said values are compared.

9. The method of claim 6 wherein said mapping includes a first path of said  
user attribute information within said first hierarchical levels that identifies at least one of  
said user attribute information, a second path of said program attribute information  
within said second hierarchical levels that identifies at least one of said program attribute  
information.

10. The method of claim 9 wherein at least one of said first path and said second path uniquely identifies a respective one of said at least one of said user attribute information and said at least one of said program attribute information.

5 11. The method of claim 10 wherein said first path uniquely identifies said at least one of said user attribute information.

10 12. The method of claim 11 wherein said at least one of said user attribute information includes a name identifier that is not unique within said user attribute information.

15 13. The method of claim 9 wherein said first path interrelates to information identified by said second path and said mapping includes a third path of said user attribute information within said first hierarchical levels that is interrelated to said information identified by said second path.

14. The method of claim 6 wherein said mapping includes identification of instances of multiple children of a parent.

20 15. The method of claim 6 wherein said mapping includes identification of a particular child of a parent, where said parent includes multiple children.

16. The method of claim 6 wherein said mapping includes identification of a particular parent for restricting said selecting.

17. A method for selecting at least one of audio and video comprising:

- (a) receiving user attribute information corresponding to user preferences, where said user attribute information includes first hierarchical levels;
- (b) receiving program attribute information corresponding to said at least one of audio and video, where said program attribute information includes second hierarchical levels;
- (c) providing a mapping that interrelates at least a portion of said user attribute information and at least a portion of said program attribute information based upon said first and second hierarchical levels, said mapping including a test operation between respective interrelations comprising at least one of:
  - (i) substring-case-insensitive;
  - (ii) substring-case-sensitive;
  - (iii) string-match-case-insensitive;
  - (iv) string-match-case-sensitive;
  - (v) value-less-than;
  - (vi) value-less-than-or-equal-to;
  - (vii) value-greater-than;

(viii) value-greater-than-or-equal-to;

(ix) not equal to;

(x) equal to; and

(x) value-approximately.

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18. The method of claim 17 further comprising selecting, in response to receiving said user attribute information and said program attribute information, at least one of audio and video based upon said mapping between said user attribute information and said program attribute information.

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19. The method of claim 18 wherein said test operation is substring-case-insensitive, characterized by said portion of said user attribute information being a substring of said portion of said program attribute information without matching the case of said matching substring.

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20. The method of claim 18 wherein said test operation is string-case-insensitive, characterized by said portion of said user attribute information being a matching string of said portion of said program attribute information without matching the case of said matching string.

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21. The method of claim 18 wherein said test operation is substring-case-sensitive, characterized by said portion of said user attribute information being a

substring of said portion of said program attribute information with matching the case of said matching substring.

22. The method of claim 18 wherein said test operation is string-case-sensitive, characterized by said portion of said user attribute information being a matching string of said portion of said program attribute information with matching the case of said matching string.

23. The method of claim 18 wherein said test operation is less than, characterized by said portion of said user attribute information being less than said portion of said program attribute information.

24. The method of claim 18 wherein said test operation is greater than, characterized by said portion of said user attribute information being greater than said portion of said program attribute information.

25. The method of claim 18 wherein said test operation is less than or equal to, characterized by said portion of said user attribute information being less than or equal to said portion of said program attribute information.

26. The method of claim 18 wherein said test operation is greater than or equal to, characterized by said portion of said user attribute information being greater than or equal to said portion of said program attribute information.

5 27. The method of claim 18 wherein said test operation is not equal to, characterized by said portion of said user attribute information being not equal to said portion of said program attribute information.

10 28. The method of claim 18 wherein said test operation is equal to, characterized by said portion of said user attribute information being equal to said portion of said program attribute information.

15 29. The method of claim 18 wherein said test operation is approximately, characterized by said portion of said user attribute information being approximately the same as said portion of said program attribute information.

30. A method for selecting at least one of audio and video comprising:

- 20 (a) receiving user attribute information corresponding to user preferences, where said user attribute information includes first hierarchical levels;



- (b) receiving program attribute information corresponding to said at least one of audio and video, where said program attribute information includes second hierarchical levels;
- (c) providing a mapping that interrelates at least a portion of said user attribute information and at least a portion of said program attribute information based upon said first and second hierarchical levels, said mapping including a combinatorial operator between respective at least pairs of interrelations comprising at least one of:
- (i) AND;
  - (ii) OR;
  - (iii) CAND;
  - (iv) MAX;
  - (v) MIN;
  - (vi) PROD;
  - (vii) SAND;
  - (viii) SUM;
  - (ix) FREQ; and
  - (x) RATIO.

31. The method of claim 30 further comprising selecting, in response to receiving said user attribute information and said program attribute information, at least

one of audio and video based upon said mapping between said user attribute information and said program attribute information.

32. The method of claim 31 wherein said combinatorial operator is said AND,  
5 characterized by said respective at least pairs of interrelations boolean ANDed together.

33. The method of claim 31 wherein said combinatorial operator is said OR,  
characterized by said respective at least pairs of interrelations boolean ORed together.

10 34. The method of claim 31 wherein said combinatorial operator is said MAX,  
characterized by said respective at least pairs of interrelations combined arithmetically in  
a maximum function.

15 35. The method of claim 31 wherein said combinatorial operator is said MIN,  
characterized by said respective at least pairs of interrelations combined arithmetically in  
a minimum function.

20 36. The method of claim 31 wherein said combinatorial operator is said  
PROD, characterized by said respective at least pairs of interrelations combined  
arithmetically in a product function.

37. The method of claim 31 wherein said combinatorial operator is said SUM, characterized by said respective at least pairs of interrelations combined arithmetically in a sum function.

5 38. The method of claim 31 wherein said combinatorial operator is said  
FREQ, characterized by said respective at least pairs of interrelations boolean counted  
together with the resulting sum normalized.

10 39. The method of claim 31 wherein said combinatorial operator is said  
RATIO, characterized by said respective at least pairs of interrelations boolean counted  
together with the resulting sum normalized by the number of individual preference tests.

15 40. The method of claim 31 wherein said combinatorial operator is said  
CAND, characterized by said respective at least pairs of interrelations constrained  
common node tested.

41. The method of claim 31 wherein said combinatorial operator is said  
SAND, characterized by said respective at least pairs of interrelations ANDed together in  
a non-boolean manner.

20 42. A method for selecting at least one of audio and video comprising:

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- (a) receiving user attribute information corresponding to user preferences, where said user attribute information includes first hierarchical levels;
  - (b) receiving program attribute information corresponding to said at least one of audio and video, where said program attribute information includes second hierarchical levels; and
  - (c) providing a first mapping that interrelates at least a portion of said user attribute information and at least a portion of said program attribute information based upon said first and second hierarchical levels, said first mapping including a first combinatorial operator between respective at least pairs of interrelations; and
  - (d) providing a second mapping including a second combinatorial operator between respective at least pairs of the result of said first mapping.
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43. The method of claim 42 further comprising selecting, in response to receiving said user attribute information and said program attribute information, at least one of audio and video based upon said mapping between said user attribute information and said program attribute information.

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44. The method of claim 43 wherein said second combinatorial operator operates on the results of said first mapping that have dissimilar reference names.

45. The method of claim 43 wherein said second combinatorial operator operates on the results of said first mapping that have the same reference names.

46. The method of claim 45 further providing a third mapping including a third combinatorial operator between respective at least pairs of the result of said first mapping, wherein said third combinatorial operator operates on the results of said first mapping that have the same reference names.

47. The method of claim 43 wherein said first mapping includes a first path of said user attribute information within said first hierarchical levels that identifies at least one of said user attribute information, a second path of said program attribute information within said second hierarchical levels that identifies at least one of said program attribute information, said second combinatorial operator operates on the results of said first mapping constrained by a base path.

48. A method for selecting at least one of audio and video comprising:

- (a) receiving user attribute information corresponding to user preferences, where said user attribute information includes first hierarchical levels;
- (b) receiving program attribute information corresponding to said at least one of audio and video, where said program attribute information includes second hierarchical levels;

(c) selecting, in response to receiving said user attribute information and said program attribute information, at least one of audio and video based upon a mapping between said user attribute information and said program attribute information; and

(d) further selecting, based upon the selecting of step (c), at least one of said audio and video based upon information regarding how the user desires to consume said at least one of audio and video.

49. The method of claim 48 wherein said consume includes at least one of volume, contrast, and audio/visual summary.

50. The method of claim 48 wherein said further selecting is provided by a service provider remote to said user.

51. The method of claim 48 wherein said further selecting is performed based upon multiple potential service levels provided by a service provider.

52. The method of claim 48 wherein said further selecting is based, at least in part, upon the user's available storage.

53. The method of claim 48 wherein said further selecting is based, at least in part, upon the user's available bandwidth to receive said at least one of audio and video.

54. A method for selecting at least one of audio and video comprising:

- (a) receiving user attribute information corresponding to user preferences, where said user attribute information includes first hierarchical levels;
- (b) receiving program attribute information corresponding to said at least one of audio and video, where said program attribute information includes second hierarchical levels;
- (c) selecting, in response to receiving said user attribute information and said program attribute information, at least one of audio and video based upon a mapping between said user attribute information and said program attribute information; and
- (d) further selecting, based upon the selecting of step (c), at least one of said audio and video based upon information regarding at least one of :
  - (i) the user's available bandwidth to receive said at least one of audio and video;
  - (ii) the user's available storage for said at least one of audio and video; and
  - (iii) multiple potential service levels provided by a service provider.

55. The method of claim 54 wherein said information regarding is said user's available bandwidth.

5 56. The method of claim 54 wherein said information regarding is said user's available storage.

57. The method of claim 54 wherein said information regarding is said multiple potential service levels.

10 58. The method of claim 54 wherein said selecting is performed by a service provider remote to said user.

15 59. The method of claim 55 wherein said selecting is performed by a service provider remote to said user.

60. The method of claim 56 wherein said selecting is performed by a service provider remote to said user.

20 61. The method of claim 57 wherein said selecting is performed by a service provider remote to said user.



**METHOD FOR INTERPRETING AND EXECUTING USER  
PREFERENCES OF AUDIOVISUAL INFORMATION**

An agent for audiovisual materials is disclosed.

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